CLAIMS

1. A computer program product, tangibly embodied in an information carrier, the computer program product comprising instructions operable to cause data processing apparatus to perform operations comprising:

5   sending a markup language page to a browser on a client;

interpreting the markup language page by the browser to receive data from the user in a transfer format;

transferring the data in the transfer format to an object on a server;

storing the data by the object in the transfer format;

10   converting the data from the transfer format to a process format by the object;

checking the compliance of the data with a predefined rule by the object; and

if the data complies with the predefined rule,

    forwarding the data in the process format by the object to the application;

else,

15   resending the markup language page to the browser with the data in the transfer format.

2. The product of claim 1, wherein the transfer format is a string format.

20 3. The product of claim 1, wherein the predefined rule is internal to the object.

4. The product of claim 1, wherein the predefined rule is external to the object.

5. The product of claim 1, wherein the operations further comprise storing state

25 information in permanent memory and restoring the object by using the state information.

6. The product of claim 5, wherein restoring is delayed until transferring.

7. The product of claim 5, wherein storing state information in permanent memory is

30 performed by storing in hidden input fields in the page.

8. The product of claim 1, wherein the operations further comprise maintaining on the client a copy of the markup language page that was previously sent and wherein resending the markup language page to the client includes:

5   identifying a portion of the markup language page that has changed since the markup language page was previously sent; and

resending only the portion of the markup language page that has changed.

9. The product of claim 1, wherein the object is provided by a software framework

10 running on the server; the software framework being external to the application.

10. The product of claim 1, wherein the instructions do not need to be in a particular programming language.

15 11. The product of claim 1, wherein the operations do not require any particular flow logic.

12. The product of claim 1, wherein the operations do not assume a particular error handling scheme.

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13. A method, comprising:

sending a markup language page to a browser on a client;

interpreting the markup language page by the browser to receive data from the user in a transfer format;

25   transferring the data in the transfer format to an object on a server;

storing the data by the object in the transfer format;

converting the data from the transfer format to a process format by the object;

checking the compliance of the data with a predefined rule by the object; and

if the data complies with the predefined rule,

30   forwarding the data in the process format by the object to the application;

else,

resending the markup language page to the browser with the data in the transfer format.

14.   The method of claim 13, further comprising maintaining on the client a copy of the markup language page that was previously sent and wherein resending the markup language page to the client includes:

identifying a portion of the markup language page that has changed since the markup language page was previously sent; and

resending only the portion of the markup language page that has changed.

15. The method of claim 13, wherein the object is provided by a software framework running on the server; the software framework being external to the application.

16. Apparatus, comprising:

means for sending a markup language page to a browser on a client;

means for interpreting the markup language page by the browser to receive data from the user in a transfer format;

means for transferring the data in the transfer format to an object on a server;

means for storing the data by the object in the transfer format;

means for converting the data from the transfer format to a process format by the object;

means for checking the compliance of the data with a predefined rule by the object; and

if the data complies with the predefined rule,

forwarding the data in the process format by the object to the application;
else,

resending the markup language page to the browser with the data in the transfer format.

17.   The apparatus of claim 16, further comprising means for maintaining on the client a copy of the markup language page that was previously sent and wherein the means for resending the markup language page to the client includes:

    means for identifying a portion of the markup language page that has changed since the markup language page was previously sent; and

    means for resending only the portion of the markup language page that has changed.

18.   The apparatus of claim 16, wherein the object is provided by a software framework running on the server; the software framework being external to the application.